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**Ticona**

February 6, 2012  
EIJ-014-12  
TPI Project – 07082011-MISC

Bishop Facility  
Highway 77 South  
P.O. Box 428  
Bishop, TX 78343

Mr. David Eppler  
Air Toxics and Inspection Coordination Branch  
U.S.EPA Region 6  
1445 Ross Avenue  
Dallas, TX 75202-2733

Subject: **Clean Air Act (“CAA”) Section 114 Information Request –  
Supplemental Monthly Response**

Dear Mr. Eppler,

As follow up to our meeting on December 20, 2011 and agreement to submit periodic progress reports, Ticona Polymers, Inc. (Ticona) is submitting the following information relating to the EPA's Section 114 Information Request. The team continues to work diligently on this project and the next update is due to you by February 20<sup>th</sup>, however, I will be out of the plant for shoulder surgery and request this next report be delayed till March 5, 2012.

### **MO3/MO4 Flares**

As previously stated in our January 15<sup>th</sup> submittal a Ticona team consisting of process control, project, production, process safety and environmental engineers has been evaluating options to address the Btu value issues.

As earlier reported the two options being assessed are: adding Natural gas to increase the heating value and using a molecular seal to prevent flashback if the center steam is discontinued.

- After discussions with John Zink the use of a molecular seal to prevent flashback was ruled out as an option due to safety considerations. According to John Zink representatives a molecular seal in the tip of the flare would restrict the flow of the vent gas. Based on the flammability composition of the startup material it was felt there was too great a risk to use the seal in our situation.
- Adding Natural gas to achieve the desired heating value is currently being pursued. Process engineer Sam Patel has reevaluated the flare design calculations and has sent them to Callidus engineering staff for further review. There have been several issues that needed to be addressed before information could be shared between companies, and work schedule coordination has become an issue.

- Prior to sharing information a Non-Disclosure Agreement had to be put in place. This took several days getting people with signatory authorization in place to sign the agreement.
- Callidus personnel have been very busy on other projects as well as traveling. This has presented a problem with phone calls not being returned and scheduled meetings not being kept.

Even with all the delays our team has continued to brainstorm ideas and review various issues to arrive at a solution for increasing the Btu value of both flares.

Things that are have been done or are currently being done:

- Process control has changed the DCS program for the makeup natural gas control valve. This allows the valve to go wide open and flow the maximum amount of natural gas when the flare starts up.
- A Process Engineer has reviewed all flare calculations and determined the natural gas flow necessary to achieve 300 Btu (900M/scfh).
- Natural gas piping to the flares has been evaluated and determined to be too small for the required flow.
- Measurements and sizing determinations have been made for the installation of new natural gas piping.
- It has been determined a vent gas flow meter was not operating properly and was in need of repair.
- Production rates have been temporarily reduced

Evaluations that cannot be made until Callidus Technologies provides calculations or flare design data:

- Is the current flare design adequate for the required increase in natural gas?
- Are the flares tall enough to meet the radiant heat limitations?
- With the increased temperature in the area what are the possibilities of ignition should a relief devices relieve?
- Would the unit process equipment have to be shut down when the flare is in service?

Should you have any questions or need additional information, please contact me at (361) 584-6104.

Sincerely



Buddy Joyner  
Sr. Environmental Specialist II

Enclosed: Email chain of events between Ticona and Callidus

**Ticona Polymers, Inc. Initial Email assistance request to Callidus Technologies:**

From: Patel, Samyak, Ticona/US  
Sent: Friday, January 20, 2012 7:28 AM  
To: [brian.duck@honeywell.com](mailto:brian.duck@honeywell.com)  
Subject: MO Flares Specification Sheet

"As per our conversation, MOIII and MOIV flares were designed to operate as non-assisted flares which satisfy the 200 BTU/SCF requirements. On the other hand, the EPA has concluded that these two flares are steam-assisted due to having center steam; therefore, we have to meet the required net heating value of 300 BTU/SCF.

I have attached a process specification sheet for MOIII and MOIV flares. This spec sheet consists of the mol fractions of each component in the vent gas for both flares and mol fractions of each component in the fuel gas. It also states the maximum vent gas flow, LHV and available pressure. Based on the given information I am requesting you to send me your calculated fuel gas flow to achieve 300 BTU/SCF with a minimum of 98% combustion, necessary steam flow, actual tip velocity as well as the maximum tip velocity and the height of the flares based on the allowable radiation of 500 BTU/hr-ft<sup>2</sup> or 1.58 KW/m<sup>2</sup> for both MOIII and MOIV flares.

Another standing question, based on the new fuel gas requirement to satisfy 300 BTU/SCF, is whether or not the current flares are capable of operating at these higher required rates?

The purpose for these request is to verify my calculations and develop a game plan to satisfy EPA requirements. Your response to these questions will be highly beneficial and will help paint a clearer picture of the current situation. Please feel free to email me or call me if you have any questions or need more information. Thank you for your time!"

**Callidus Technologies Reply 1/26/2012:**

From: Settles, Aaron [<mailto:Aaron.Settles@Honeywell.com>]  
Sent: Thursday, January 26, 2012 6:30 PM  
To: Patel, Samyak, Ticona/US  
Subject: FW: MO Flares Specification Sheet

Dear Mr. Patel,

I have been assigned to complete this project for you. As I understand that it is of top importance, I should have it to you no later than this Saturday (1/28).

Regards,

**Aaron Settles**

Combustion Engineer - Flares Group  
Callidus Technologies by Honeywell  
Office - (918) 523-2112

**Callidus Technologies Reply 1/28/12:**

From: Settles, Aaron [<mailto:Aaron.Settles@Honeywell.com>]  
Sent: Saturday, January 28, 2012 1:32 PM  
To: Patel, Samyak, Ticona/US  
Subject: RE: MO Flares Specification Sheet

Mr. Patel,

I have for you the calculations of the necessary assist gas. For the MOIV flare, you will require 845,749.75 SCFH of assist. And for the MOIII flare, you will require 311,733.57 SCFH of assist. Unfortunately, at this time I am unable to access the flare drawings to determine if you require new designs (based on pressure, height, etc.). As of now, I will likely not be able to access these until the middle of next week. However, if you have the height, tip, and riser dimensions handy, I could provide this to you sooner than that.

Regards,

**Aaron Settles**

Combustion Engineer - Flares Group  
Callidus Technologies by Honeywell  
Office - (918) 523-2112

**Ticona Polymers, Inc Reply 1/30/12:**

From: Patel, Samyak, Ticona/US [<mailto:samyak.patel@ticona.com>]  
Sent: Monday, January 30, 2012 05:51 AM  
To: Settles, Aaron  
Subject: RE: MO Flares Specification Sheet

Aaron,

Thank you very much for the calculations you sent me last Saturday! Would it be beneficial to you if I scanned a copy of the flare drawings and emailed it to you?

-Samyak Patel

**Callidus Technologies reply 1/30/12:**

From: Settles, Aaron [<mailto:Aaron.Settles@Honeywell.com>]  
Sent: Monday, January 30, 2012 8:32 AM  
To: Patel, Samyak, Ticona/US  
Subject: Re: MO Flares Specification Sheet

Mr. Patel,

Scanned copies of the flare drawings would be excellent.

Thanks,

Aaron Settles

**Ticona Polymers, Inc. reply 1/30/12:**

From: Patel, Samyak, Ticona/US  
Sent: Monday, January 30, 2012 10:32 AM  
To: 'Settles, Aaron'  
Subject: RE: MO Flares Specification Sheet

Aaron,

Sounds good. I will email that to you as soon as possible.

Thanks,

Samyak Patel

## Callidus Technologies reply 2/4/12:

**From:** Settles, Aaron <[Aaron.Settles@Honeywell.com](mailto:Aaron.Settles@Honeywell.com)>

**Sent:** Saturday, February 04, 2012 1:45 PM

**To:** Patel, Samyak, Ticona/US

**Cc:** Joyner, Edward (Buddy), Celanese/US

**Subject:** RE: Update!

Mr. Patel,

I am still working to finalize the calculations on the other items besides the assist gas as discussed. Please excuse the delay, as I have been in and out of the office all week. Regarding the calculations that I already sent — essentially how we calculate does not take into account the steam assist nature of the flare tip. While this is important for determining a viable heating value of the process gas, it does not affect further calculations. As such, what we did was take the process data of the streams that you supplied to us and add in enough of the fuel gas (also supplied by you) until we reached the desired 300 btu/scf heating values. The only immediate place where I would assume a possible deviation would be that we used mol fractions (that is if you happened to use mass fractions). Anyway, please let me know if this clears things up, or if you have further questions. Also, please know that I have not forgotten about the other calculations and should have them to you some time during the beginning of this next week.

Regards,

**Aaron Settles**

Combustion Engineer - Flares Group

Callidus Technologies by Honeywell

Office - (918) 523-2112

## Ticona Polymers, Inc. information request 2/3/12:

**From:** Patel, Samyak, Ticona/US <mailto:samyak.patel@ticona.com>

**Sent:** Friday, February 03, 2012 8:16 AM

**To:** Settles, Aaron

**Cc:** Joyner, Edward (Buddy), Celanese/US

**Subject:** Update!

Aaron,

I was wondering if you can give me an update on where we stand with the flare calculations. This information will help us in submitting a report to the EPA regarding our progress to satisfy the requirement. Also, I was wondering if you can send me your calculations for the required natural gas numbers. I want to compare our calculation method and see why our numbers vary a little. Thank you for your time.

Regards,

*Samyak Patel*

Celanese, Ltd.

Process Engineer — Bishop

Facility Phone: (361)-584-6131